

Space Weather Highlights
05 February - 11 February 2018

SWPC PRF 2215
12 February 2018

Solar activity was at very low levels on 05, 08-09 and 11 Feb while low levels were observed on 06-07 and 10 Feb. All of the period's activity originated from Region 2699 (S07, L=165, class/area Dai/240 on 10 Feb). The largest observed event was a C8 flare observed at 07/1347 UTC. No Earth-directed CME activity was detected during the period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels the entire period.

Geomagnetic field activity was at predominately quiet levels under a nominal solar wind regime. Isolated unsettled intervals were observed on 05, 09 and 10 Feb.

Space Weather Outlook
12 February - 10 March 2018

Solar activity is expected to be at very low to low levels, with a chance for M-class activity, through 16 Feb due to the flare potential of Region 2699. Very low levels are expected from 17-28 Feb. A return to very low to low levels, with a chance for M-class activity, is possible from 01-10 Mar after the return of old Region 2699.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels on 12-25 Feb, with a chance for high levels on 19 Feb, due to influence from recurrent CH HSSs. Mostly normal levels are anticipated on 26 Feb - 10 Mar.

Geomagnetic field activity is expected to be at quiet to unsettled levels on 15-18 Feb, 20-22 Feb and 04 Mar, with isolated active periods likely on 16 Feb. This activity is due to influence from recurrent CH HSSs. Mostly quiet conditions are expected for the remainder of the outlook period.



Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
05 February	74	13	130	A9.5	0	0	0	9	0	0	0	0
06 February	77	17	160	A6.6	1	0	0	5	0	0	0	0
07 February	77	20	200	A6.1	2	0	0	8	0	0	0	0
08 February	78	22	200	A6.1	0	0	0	6	1	0	0	0
09 February	78	23	210	A5.5	0	0	0	4	0	0	0	0
10 February	78	35	240	A6.4	1	0	0	1	0	0	0	0
11 February	78	24	230	A6.3	0	0	0	0	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day -sr)			Electron Fluence (electrons/cm ² -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
05 February		4.3e+05	1.7e+04	3.6e+03		2.2e+05
06 February		5.8e+05	1.6e+04	3.4e+03		3.2e+05
07 February		6.9e+05	1.6e+04	3.5e+03		3.2e+05
08 February		7.2e+05	1.6e+04	3.5e+03		2.7e+05
09 February		5.6e+05	1.7e+04	4.0e+03		2.2e+05
10 February		4.1e+05	1.7e+04	3.6e+03		1.1e+05
11 February		3.9e+05	1.7e+04	3.8e+03		7.3e+04

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
05 February	8	3-2-2-2-3-2-1-1	17	1-1-5-4-5-1-0-0	8	3-2-2-2-3-2-1-1
06 February	4	1-2-1-1-1-1-1-1	10	0-0-2-5-4-0-0-0	5	1-2-2-2-1-0-1-1
07 February	3	0-1-1-2-2-1-1-0	4	0-0-1-3-3-0-0-0	4	1-1-1-2-2-0-0-0
08 February	2	0-1-0-1-1-1-1-1	1	0-0-0-2-0-0-0-0	4	1-1-1-1-1-0-1-2
09 February	2	1-2-1-0-0-0-1-1	0	0-1-0-0-0-0-0-0	5	1-3-1-0-0-0-1-2
10 February	7	1-2-2-3-2-1-2-1	10	0-0-0-4-5-2-0-0	7	1-2-1-3-2-2-2-1
11 February	2	1-0-0-0-1-1-1-0	0	0-0-0-1-0-0-0-0	4	1-0-0-1-0-1-1-1

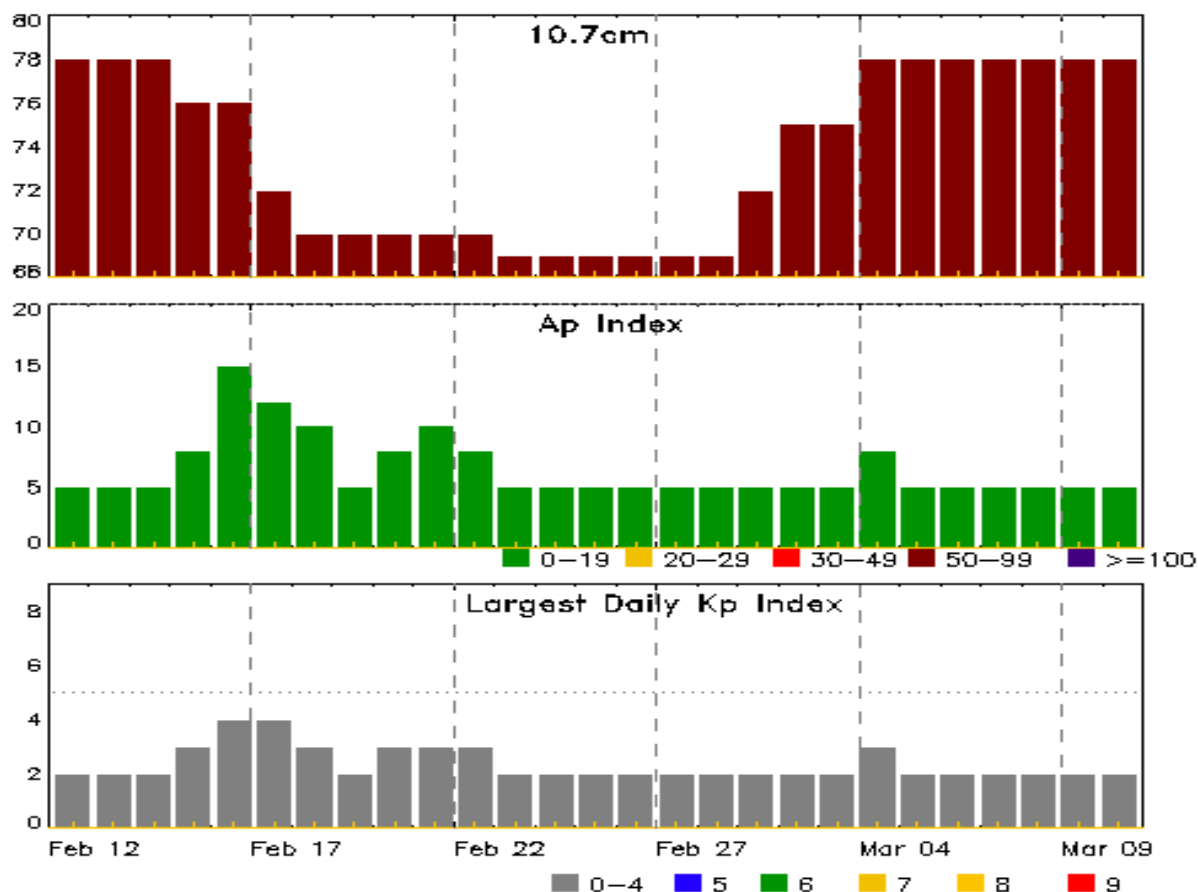


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
No Alerts or Warnings Issued		



Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
12 Feb	78	5	2	26 Feb	69	5	2
13	78	5	2	27	69	5	2
14	78	5	2	28	69	5	2
15	76	8	3	01 Mar	72	5	2
16	76	15	4	02	75	5	2
17	72	12	4	03	75	5	2
18	70	10	3	04	78	8	3
19	70	5	2	05	78	5	2
20	70	8	3	06	78	5	2
21	70	10	3	07	78	5	2
22	70	8	3	08	78	5	2
23	69	5	2	09	78	5	2
24	69	5	2	10	78	5	2
25	69	5	2				

Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray Class	Optical		
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	Rgn #
05 Feb	0117	0120	0129	B1.9			2699
05 Feb	0316	0320	0325		SF	S07E80	2699
05 Feb	0332	0336	0341		SF	S07E80	2699
05 Feb	0538	0541	0545	B2.0			2699
05 Feb	0710	0715	0718		SF	S08E80	2699
05 Feb	0744	0744	0748		SF	S07E76	2699
05 Feb	0809	0822	0827	B6.1			
05 Feb	1037	1043	1050	B3.0			
05 Feb	1127	1138	1144	B2.0			
05 Feb	1522	1525	1527	B2.0			
05 Feb	1545	1553	1605	B2.7	SF	S10E71	2699
05 Feb	1716	1716	1722		SF	S10E71	2699
05 Feb	1818	1824	1826	B8.1	SF	S10E69	2699
05 Feb	1906	1909	1911	B1.4			
05 Feb	1923	1926	1928	B1.1			
05 Feb	2030	2037	2048	B3.3	SF	S10E68	2699
05 Feb	2136	2149	2153	B3.2	SF	S09E67	2699
05 Feb	2216	2221	2227	B4.1			2699
06 Feb	B0000	0010	0014		SF	S10E65	2699
06 Feb	0038	0042	0045	B3.2			2699
06 Feb	0106	0110	0115	B3.1			2699
06 Feb	0254	0300	0302	B2.8			2699
06 Feb	0519	0528	0543	B3.7			2699
06 Feb	0620	0627	0634	B2.4			2699
06 Feb	0908	0914	0918	B2.3			2699
06 Feb	1054	1106	1117	B2.7			2699
06 Feb	1414	1426	1448	B5.6	SF	S08E58	2699
06 Feb	1744	1749	1754	B1.1			2699
06 Feb	1845	1858	1944	C1.0	SF	S08E57	2699
06 Feb	1951	1951	1959		SF	S08E55	2699
06 Feb	2358	2358	A2359		SF	S08E52	2699



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
07 Feb	B0000	0000	0004		SF	S08E52	2699
07 Feb	0019	0038	0046	B7.9	SF	S05E53	2699
07 Feb	0225	0225	0235		SF	S11E52	2699
07 Feb	0729	0732	0736	B1.3			2699
07 Feb	1331	1347	1354	C8.1			2699
07 Feb	B1416	1419	1421		SF	S06E45	2699
07 Feb	1431	1442	1510	C1.7	SF	S06E45	2699
07 Feb	1801	1805	1811	B1.4	SF	S06E42	2699
07 Feb	2256	2259	2312		SF	S07E40	2699
07 Feb	2332	2335	2337	B2.1	SF	S08E39	2699
08 Feb	1415	1422	1423		1F	S08E39	2699
08 Feb	1520	1530	1535	B5.2	SF	S08E39	2699
08 Feb	1651	1659	1721	B7.4	SF	S07E33	2699
08 Feb	1839	1845	1850	B5.1			2699
08 Feb	1943	1955	2001	B5.1	SF	S07E29	2699
08 Feb	2025	2034	2041	B6.3	SF	S07E30	2699
08 Feb	2110	2114	2117	B1.6	SF	S06E30	2699
08 Feb	2122	2139	2145	B4.8	SF	S06E30	2699
09 Feb	0343	0348	0354	B2.3			2699
09 Feb	0631	0636	0639	B1.6			2699
09 Feb	0827	0831	0835	B2.1			2699
09 Feb	1243	1247	1252	B1.2			2699
09 Feb	1451	1456	1501	B3.2	SF	S08E20	2699
09 Feb	1540	1547	1552	B7.2	SF	S08E20	2699
09 Feb	1638	1643	1654	B4.6	SF	S08E20	2699
09 Feb	1745	1749	1755	B1.2			2699
09 Feb	1812	1819	1829	B4.4	SF	S09E17	2699
10 Feb	1302	1321	1336	C4.6			2699
10 Feb	1631	1643	1651	B2.4			2699
10 Feb	1809	1814	1817	B1.3			2699
10 Feb	2034	2040	2047	B1.1			2699
10 Feb	2135	2148	2156	B4.7	SF	S08E02	2699
11 Feb	0104	0109	0111	B4.8			2699
11 Feb	0452	0455	0458	B1.0			2699
11 Feb	0529	0535	0540	B2.6			2699
11 Feb	0819	0824	0827	B1.7			2699
11 Feb	0900	0907	0914	B3.7			2699
11 Feb	0950	1003	1014	B8.3			2699



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
11 Feb	1137	1141	1144	B1.2			2699
11 Feb	1323	1329	1345	B1.8			2699
11 Feb	1353	1357	1410	B1.6			2699
11 Feb	1410	1429	1443	B3.3			2699
11 Feb	1613	1618	1620	B1.5			2699
11 Feb	2129	2136	2139	B1.2			2699
11 Feb	2143	2147	2149	B1.6			2699
11 Feb	2234	2237	2239	B1.1			2699
11 Feb	2310	2313	2316	B1.0			2699



Region Summary

Location		Sunspot Characteristics					Flares							
Date	Lat CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical			
	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4

Region 2697

30 Jan	S10E48	263	10	3	Bxo	3	B								
31 Jan	S09E33	265	0	3	Axx	3	A								
01 Feb	S09E19	266	plage												
02 Feb	S09E05	266	plage												
03 Feb	S09W09	267	plage												
04 Feb	S09W23	268	plage												
05 Feb	S09W37	269	plage												
06 Feb	S09W51	270	plage												
07 Feb	S09W65	271	plage												
08 Feb	S09W79	271	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 266

Region 2698

02 Feb	S03E77	194	10	2	Axx	1	A								
03 Feb	S03E62	196	plage												
04 Feb	S03E47	198	plage												
05 Feb	S03E32	200	plage												
06 Feb	S03E17	202	plage												
07 Feb	S03E02	204	plage												
08 Feb	S03W13	205	plage												
09 Feb	S03W28	207	plage												
10 Feb	S03W43	209	plage												
11 Feb	S03W58	211	plage												
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 204



Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 2699															
04 Feb	S04E74	171	80	2	Hsx	1	A	1			3	1			
05 Feb	S06E64	168	130	4	Cso	3	B				9				
06 Feb	S08E51	168	160	9	Dso	7	B	1			5				
07 Feb	S08E39	167	200	10	Dso	10	BG	2			8				
08 Feb	S06E25	167	200	9	Dai	12	BG				6	1			
09 Feb	S07E13	166	210	9	Dai	13	B				4				
10 Feb	S07E01	165	240	10	Dai	25	B	1			1				
11 Feb	S07W14	167	230	10	Dai	14	B								
								5	0	0	36	2	0	0	0

Still on Disk.

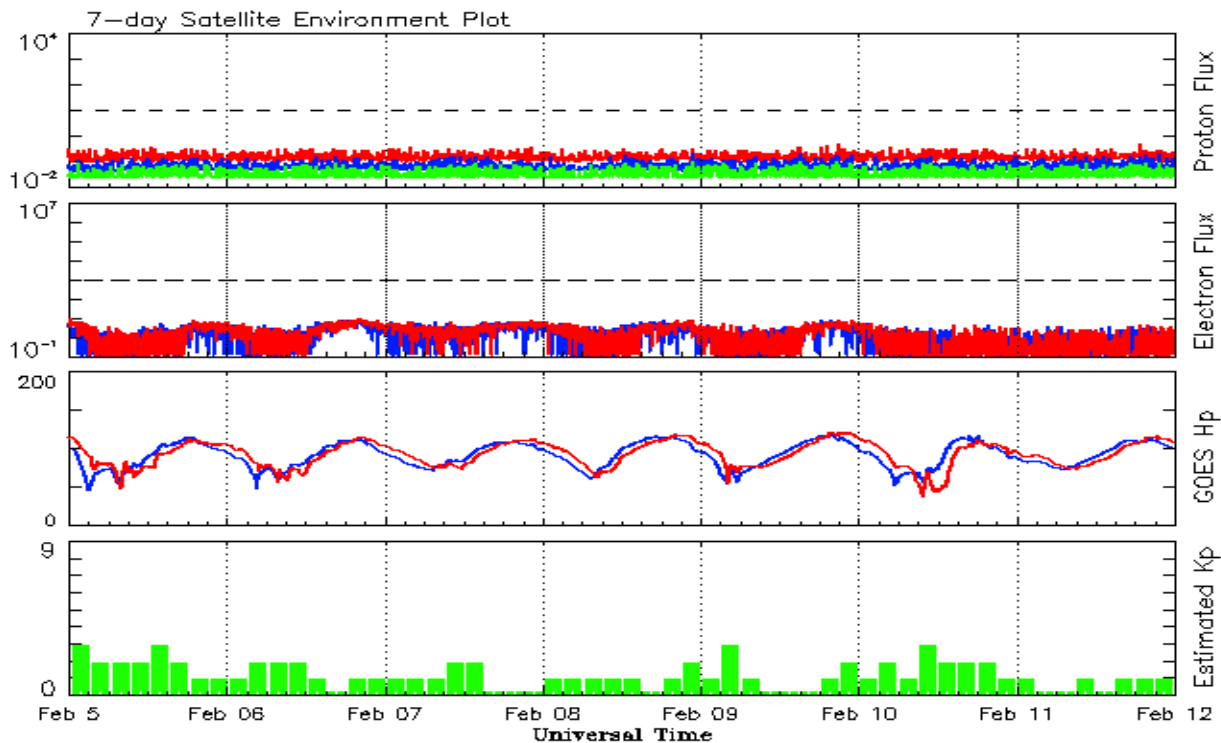
Absolute heliographic longitude: 165

Recent Solar Indices (preliminary)
Observed monthly mean values

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2016									
February	56.0	33.8	0.61	49.6	31.5	103.5	98.1	10	12.0
March	40.9	32.5	0.80	47.7	30.2	91.6	96.6	11	11.8
April	39.2	22.7	0.58	45.0	28.7	93.4	95.3	10	11.8
May	48.9	30.9	0.64	42.1	26.9	93.1	93.2	12	11.7
June	19.3	12.3	0.65	39.0	24.9	81.9	90.4	9	11.4
July	36.8	19.4	0.53	36.5	23.1	85.9	87.7	10	11.2
August	50.4	30.1	0.60	34.2	21.6	85.0	85.5	10	11.2
September	37.4	26.8	0.72	32.1	19.9	87.8	83.7	16	11.3
October	30.0	20.0	0.67	31.1	18.9	86.1	82.5	16	11.6
November	22.4	12.8	0.57	29.4	17.9	78.7	81.1	10	11.6
December	17.6	11.1	0.64	28.1	17.1	75.1	80.0	10	11.4
2017									
January	28.1	15.7	0.55	27.3	16.7	77.4	79.4	10	11.3
February	22.0	15.8	0.71	25.5	15.9	76.9	78.7	10	11.3
March	25.4	10.6	0.42	24.6	15.4	74.6	78.6	15	11.5
April	30.4	19.4	0.64	24.3	14.9	80.9	78.4	13	11.5
May	18.1	11.3	0.62	23.1	14.0	73.5	77.7	9	11.3
June	18.0	11.5	0.64	22.0	13.3	74.8	77.3	7	11.3
July	18.8	10.7	0.59	20.8	12.6	77.7	76.8	9	11.0
August	25.0	19.6	0.80			77.9		12	
September	42.2	26.2	0.62			92.0		19	
October	16.0	7.9	0.49			76.4		11	
November	7.7	3.4	0.44			72.1		11	
December	7.6	4.9	0.64			71.5		8	
2018									
January	7.8	4.0	0.51			70.0		6	

Note: Values are final except for the most recent 6 months which are considered preliminary.
Cycle 24 started in Dec 2008 with an RI=1.7.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 05 February 2018*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

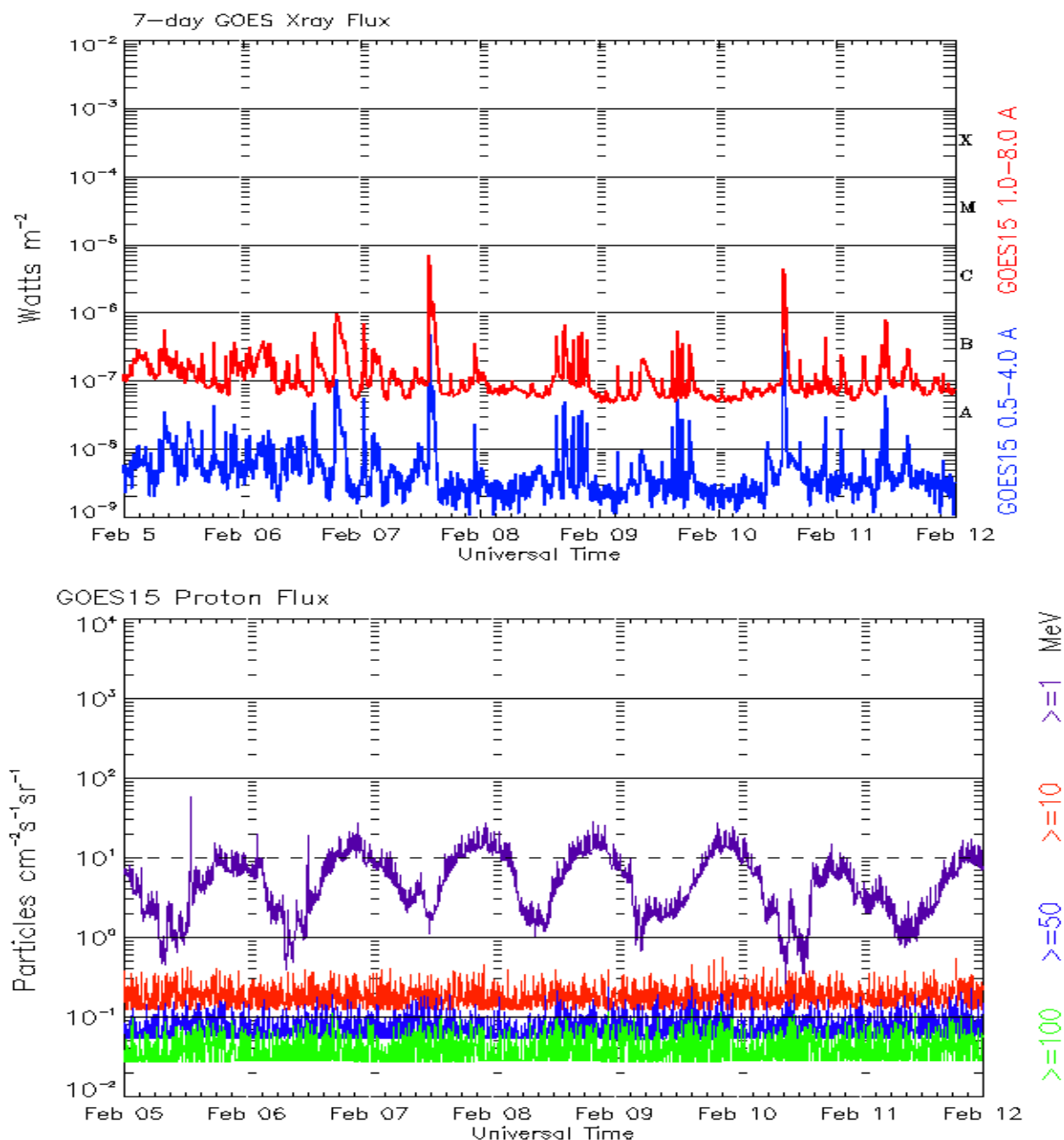
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are 'global' parameters that are applicable to a first order approximation over large areas. H parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





*Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 05 February 2018*

The x-ray plots contains five-minute averages x-ray flux (Watt/m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged integral flux units (pfu = protons/ cm^2 -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1 , >10 , >30 , and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.

Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)

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Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned.
Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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